

# Truckee Regional Aquatic Invasive Species Prevention Program 2012 Final Report



Prepared by: Teresa Crimmens, Tahoe Resource Conservation District  
Prepared for: Truckee River Fund Advisory Committee



## INTRODUCTION

Prevention and control of aquatic invasive species (AIS) continues to be one of the most challenging issues facing resource managers in the western United States. While state and federal officials have implemented control measures and programs on a broad scale, protecting specific water bodies from AIS has primarily been left to local governments and resource managers. While quagga mussels, and the closely related zebra mussel, have been in the Great Lakes since the late 1980's their relatively recent introduction and spread in western states has elevated the importance of aquatic invasive species in general and motivated many resource managers to evaluate the risks associated with other invasive species. The potential spread of invasive species such as Asian clam, Eurasian watermilfoil, New Zealand mudsnail, Hydrilla, and other mobilizing invasive species present their own resource and management concerns that are best addressed on a watershed scale. This is particularly true for AIS given their ability to travel through open water systems within a watershed.

Since 2010, the Tahoe Resource Conservation District (Tahoe RCD) has coordinated with local partners in the Middle Truckee River Watershed (outlet of Lake Tahoe to the California state line) to implement the Truckee

<b>Donner Lake</b>	<b>Stampede Reservoir</b>
<b>Independence Lake</b>	<b>Boca Reservoir</b>
<b>Webber Lake</b>	<b>Prosser Reservoir</b>
<b>Martis Creek Lake</b>	<b>Lake of the Woods</b>

Regional Aquatic Invasive Species Prevention Program (TRAISPP). The principle objectives of this pilot program are to better understand invasive species issues in the region, provide outreach and education on invasive species, organize regional resource managers, evaluate usage patterns, and evaluate the feasibility of watercraft inspections and decontaminations. Since the program began in 2010, it has benefited from broad support amongst resource managers, county representatives, utility managers and boaters as well as funding from the Truckee River Fund.

In 2011, federal, state and local agencies and stakeholders completed a risk analysis for the program area, which showed moderate to high risk of introduction, establishment and transport of

AIS. As a result, project partners began working toward the creation of mandatory inspection programs within each of the jurisdictions in the program area – Placer County, Nevada County, Sierra County and the Town of Truckee.

Coordination efforts have resulted in a formal Memorandum of Understanding and letters of support, as well as, funding and in-kind contributions from partner agencies. The geographical scope of coordination has extended through the entire Truckee River watershed, from Lake Tahoe to Pyramid Lake. The degree of coordination and cooperation among partner agencies underscores the importance and need for regional management efforts.

## **FINAL REPORT**

For a third year, a Truckee River Fund grant supported the Truckee Regional Aquatic Invasive Species Prevention Program for the period of April 1, 2012 – March 31, 2013. The principle objectives for this grant period were to better understand invasive species issues in the region, provide outreach and education on invasive species, organize regional resource managers, evaluate usage patterns, and evaluate the feasibility of watercraft inspections and decontaminations. More specifically, the proposal submitted to the Truckee River Fund identified Project Goals which are presented in this section of the report. Compliment to these is a brief summary of accomplishments for each of the identified Project Goals. Greater detail is provided in the following sections of the report that specifically address many of the identified goals and outcomes.

### **Project Goals**

- 1) Establish inspection authority, including implementation of County and City ordinances to develop a mandatory aquatic invasive species (AIS) prevention program*

Accomplishments: Working closely with staff from the Truckee River Watershed Council (TRWC) and County and Town staff, the Tahoe RCD assisted in drafting and advocating for adoption of AIS ordinances within each jurisdiction. The following ordinances were enacted during 2012.

- Town of Truckee, Ordinance 2012-06 – requires all motorized vessels to be inspected prior to launching in Truckee waters (Donner Lake, Glenshire Pond and Truckee River).
- Sierra County, Ordinance that adds to Chapter 9.05 of County Code – states that all motorized craft are subject to inspection prior to launching in Sierra County Waters. This ordinance will affect the entire county, which includes Stampede Reservoir, Lake of the Woods and Independence Lake within the Middle Truckee River Watershed program area.
- Nevada County, Ordinance (passed on December 11, 2012) – requires waterbody owners to develop a watercraft inspection program for waters within Nevada County east of the Sierra Crest – Independence Lake, Prosser Reservoir, Boca Reservoir and Donner Lake.
- Placer County, Ordinance adoption not completed. Tahoe RCD staff will continue to work with representatives at Placer County.

These ordinances passed at the local level because jurisdictions recognize the threat that AIS pose to their local ecology and economy; however, significant work remains to develop and implement prevention/inspection programs that facilitate boater compliance with these new rules. See Attachment A - C to view the full ordinance texts.

*2) Implement multi-source funding structure for the sustainable implementation of a mandatory AIS prevention program*

Accomplishments: Tahoe RCD staff have begun working individually with each jurisdiction to develop prevention programs that can be sustained through a combination of grant funding, inspection fees and in-kind contributions from project partners.

As prevention programs within each jurisdiction begin to take shape, grant funding will continue to be crucial. The Tahoe RCD has been awarded grant funding from the Truckee River Fund and the US Bureau of Reclamation for the 2013 season and will work with the local jurisdictions to pursue additional grant funding, especially for some of the capital costs associated with infrastructure improvements that will greatly facilitate implementation of watercraft inspections.

Ordinances passed in the Town of Truckee, Sierra County and Nevada County provide the opportunity for charging inspection fees to boaters as part of prevention programs. After the 2013 season, staff will be able to assess actual revenues from inspection fees to better plan for 2014 and beyond.

*3) Solidify multi-party collaboration and management of the Truckee Regional Aquatic Invasive Species Prevention Program (TRAISPP)*

Accomplishments: Collaboration among project partners was strengthened in several ways. Passage of ordinances in the Town of Truckee, Nevada County and Sierra County gave a clear sign that local jurisdictions are serious about AIS prevention and are willing to work together with Tahoe RCD and other project partners to implement mandatory boat inspection programs within the watershed. In a show of early pre-ordinance support, the Truckee Donner Recreation and Park District (TDRPD) staff provided inspections at Donner Lake throughout the 2012 season and have committed to serving as inspectors in 2013 under the mandatory program as well. Also in Truckee, a Steering Committee made up of representatives from the Town of Truckee, Tahoe RCD, TDRPD and Truckee River Watershed Council have been meeting regularly to develop the inspection program within the Town of Truckee. This group has been supported by a Working Group made up of agency partners (US Bureau of Reclamation, CA Department of Fish and Game, US Fish and Wildlife Service, US Forest Service, Truckee Meadows Water Authority, CA State Parks), local stakeholders and business owners. Similar processes are expected to begin in Nevada and Sierra Counties in early 2013.

*4) Secure public/private partnerships for inspection and/or decontamination of high risk watercraft*

Accomplishments: During the 2012 boating season, free decontaminations were provided to Truckee boaters at Lake Tahoe WIP inspection sites through coordination with the Tahoe Regional Planning Agency.

Tahoe RCD staff worked with local jurisdictions to develop requirements for private businesses wishing to provide decontaminations as part of the overall program. These requirements have not

yet been distributed to private businesses due to the lack of workable options for disposal of waste water from decontaminations. Finding a solution to this issue is a high priority task for 2013.

*5) Continue development and refinement of a comprehensive AIS education and outreach plan in the Truckee River watershed region.*

Accomplishments: Educating the public on how to prevent the spread of AIS is a crucial element of AIS prevention. In 2012, inspection staff interacted with more than 10,000 boaters at launch ramps. Staff met weekly to discuss which tactics were best suited to these brief conversations with boaters. In order to keep decision-makers and members of the public informed on the status of TRAISPP as well as the continued threat of AIS in the region, staff gave the following presentations:

- Sierra County Board of Supervisors
- Truckee Town Council
- Nevada County Board of Supervisors
- Sierra County Fire Safe and Watershed Council Public Meeting on AIS
- Truckee Donner Recreation & Park District Board of Directors
- REI Reno
- Truckee Meadows Water Authority Staff

TR AISPP staff disseminated information about AIS and TR AISPP through TruckeeBoatInspections.com, the AIS hotline, radio-broadcast public service announcements, signage and printed materials (state, federal and local). An education and outreach plan was developed to guide implementation for 2013 (See attachment D).

*6) Conduct early detection monitoring to gather baseline data in the lower Truckee River watershed*

Accomplishments: Early detection monitoring was performed by scientists from University of Nevada Reno (UNR), California Department of Fish and Wildlife and US Bureau of Reclamation.



UNR scientists compiled the results of the monitoring efforts (see Attachment E). Their report indicates no new AIS infestations in any of the program water bodies.

## Program Development

Work with jurisdictions on ordinance adoption and mandatory inspection program creation was complemented in 2012 by offering free voluntary inspections at Donner Lake, Prosser Reservoir, Boca Reservoir and Stampede Reservoir. Five full-time, seasonal inspectors were hired in addition to one full-time, year-round Program Coordinator. Staff not only examined boats, but also educated boaters about the threat of AIS and steps they could take to Clean, Drain and Dry their boat to prevent transport of unwanted species. Through collaboration with University of Nevada Reno, California Department of Fish and Game and US Bureau of Reclamation, early detection monitoring was conducted at all program water bodies.

Ordinances requiring that boaters submit to watercraft inspections prior to launching in program water bodies were passed by the Town of Truckee, Sierra County and Nevada County. These new rules establish inspection authority and the ability to charge fees for participation in the program. After passing AIS ordinances, the Counties and Town began development of inspection programs that operate solely within their respective jurisdictions. A major goal for 2013 will be to work towards coordination of these separate programs into one regional program. A regional program would offer benefits in cost savings, streamlined enforcement and customer service. However, since program waterbodies have widely divergent levels of access control, a phased approach to implementation of a regional program is recommended.



## Watercraft Inspections

Tahoe RCD inspectors offered free voluntary inspections at Prosser, Boca and Stampede Reservoirs from May through September, 2012. Truckee Donner Recreation and Park District staff.

provided inspections during the same period at the public boat launch on Donner Lake.

After their craft passed inspection, boaters were asked to sign the “Pledge for Healthy Truckee Waters” which states that the boater understands the threat of AIS, the typical means of transport (motorized watercraft and trailers), and the laws prohibiting transport of AIS. The boater pledged to Clean, Drain and Dry their boat prior to each launch in a new waterway, to pull drain plugs prior to arrival at the boat ramp, to not launch in known infested waters and to participate cooperatively with TRAISPP staff in the future. After signing the pledge, boaters were issued a sticker which streamlined access on their subsequent visits to TRAISPP ramps. By giving the inspector the ability to empower the boater with knowledge of how to prevent the spread of AIS the interaction between the inspectors, boaters and anglers was far more productive. In total, 3,529 pledges were signed.

At the 4 primary boat ramps in the region, which include Donner Lake, Stampede, Prosser and Boca Reservoirs, inspectors interacted 10,009 times with boaters while conducting inspections, surveys and boater education. Of these boaters, 216 vessels were identified as high risk and offered a free decontamination, though only 12 boaters returned with proof of decontamination. No vessels were found to have quagga or zebra mussels aboard. In general, staff observations indicated that the majority of boaters were aware of AIS prevention measures and have been practicing the standard “Clean, Drain and Dry” protocols. Boater response and community support show that boater education programs are very successful in the Truckee region. Consequently, the presence of watercraft inspectors at launch sites provided and excellent opportunity to interact with the various user groups present at each of the waterbodies. In addition to performing inspections, boaters were asked questions related to launching as to better understand boater usage patterns at each of the water bodies.



Watercraft inspections were performed during peak days and times; therefore, not all boaters or activities can be accounted for in the results presented. Stampede Reservoir was consistently the busiest of all the waters throughout the season, with 4,212 interactions. Donner Lake was second most utilized water body in the region with 3,376 interactions, followed by Prosser and Boca Reservoirs. These use patterns roughly mirror data collected in 2010 & 2011. Shoreline launching at Boca Reservoir has been identified as a “risk point” for that water body as it is difficult to intercept and inspect boats that are not funneled through a designated launch site. This issue was addressed in 2012 by having a roving watercraft inspector walk the shoreline and interact with as many boaters as possible. In addition, the Tahoe RCD began discussions with the USFS Truckee Ranger District and California Department of Boating and Waterways to identify possible opportunities for access management at this location.



Boca Reservoir: Shoreline Launching on East Shore

### Early Detection Monitoring

Early detection monitoring is an important part of AIS management as it allows for the quick response necessary to prevent further spread and impact by catching the establishment of AIS early. The objective of this project is to identify water bodies within the Truckee River region (Donner Lake, Stampede Reservoir, Boca Reservoir, Prosser Reservoir, Marlette Lake, Martis Creek Lake, Rye Patch Reservoir, Spooner Lake, Lahontan Reservoir) that have already established invasive invertebrate and plant communities, and to identify and document recent invasions. Additionally, the project will test the hypothesis that bivalve invasion is dependent not only on calcium concentration in the water column but also on the concentration of calcium in sediment pore-water.

This is year three of the project and built upon data collected in 2010 and 2011. Specifically, the goals were to:

1. Use the method developed by Rammer and Chandra (2010) to continue shoreline surveys for invasive invertebrates (Dreissenid mussels, New Zealand mudsnail, Asian clam and crayfish) and invasive plant (Hydrilla and Eurasian water milfoil) species.
2. Sample lakes for the DNA of Dreissenid mussel veligers to document invasions using zooplankton net hauls.
3. Quantify the concentration of calcium in the water column of each lake.
4. Collect sediment pore-water from Donner Lake’s “clam patch” and from other locations around the lake to determine if the concentration in the sediment pore-water can influence bivalve introduction.

### Boater Surveys

The presence of watercraft inspectors at launch sites provided an excellent opportunity to interact with the user groups of each of the water bodies. In addition to performing inspections, boaters were surveyed to better understand the usage patterns at each

Table 2. Total Boater Interactions	
Water Body	Interactions
Stampede Reservoir	4,212
Boca Reservoir	293
Prosser Reservoir	2,128
Donner Lake	3,376
<b>Total</b>	<b>10,009</b>

of the water bodies. The summary of results characterizes a general representation of boater information in the four water bodies where inspections/interactions occurred during 2012.

Table 3. Boater Registration	
Alaska	14
Arizona	7
California	3,170
Colorado	5
Idaho	2
Illinois	1
Montana	3

New Mexico	3
Nevada	2,173
North Carolina	2
Oregon	24
South Dakota	1
Texas	2
Utah	4
West Virginia	1
Wisconsin	5
Unknown	2,340

Watercraft inspections were performed during peak days and times; therefore, not all boaters or activities can be accounted for in the results presented. However, after careful consideration of the data analysis, the results do seem reasonable. Table 2 provides a breakdown of inspections/interactions at each of the 4 water bodies. Stampede was the busiest of all of the waters consistently throughout the entire season.

Donner Lake was busy primarily during the heart of the season, but was slow early and late in the season. Prosser is a much less visited water overall and is primarily used by anglers. The road that crosses Boca dam was closed from April through December of 2011 to help provide protection to the public and lands downstream; therefore the launch ramp was not accessible to boaters. The small number of Boca launches represents those shoreline launches that inspectors were able to intercept.

Table 4 provides a breakdown of use across different activities and water bodies. AIS prevention efforts are most effective when they can be tailored to the specific type of boater using the water. Each boating type has a different pattern of use and vector types for transmission of AIS to other waters. Additionally, different user groups obtain information from different sources. A wake boarder seeks out different supplies and information than an angler does. It is important, when planning for Education & Outreach, to disseminate information to the various shopping and informational outlets accessed by the different user groups.

Table 4. Water Body Usage

Water Body	Angling	Non-Motorized	PWC	Pleasure	Sail	Wakeboard	Ski
Stampede Reservoir	1,659	142	384	962	39	310	702
Boca Reservoir	116	138	486	476	9	193	719
Prosser Reservoir	150	134	2	10	2	0	2
Donner Lake	558	43	288	581	47	125	389
<b>TOTAL:</b>	<b>2,483</b>	<b>457</b>	<b>1,160</b>	<b>2,029</b>	<b>97</b>	<b>628</b>	<b>1,812</b>

## **PROJECT GOALS – 2013**

Tahoe RCD staff will work with local jurisdictions to develop and implement watercraft inspection programs that meet their ordinance requirements while simultaneously encouraging and facilitating as much coordination between the programs as possible to foster creation of regional programs or sub-regional programs as appropriate. Tahoe RCD will refine a comprehensive education and outreach program for AIS prevention and continue early detection monitoring over the next year.

## **ACKNOWLEDGMENTS**

The ongoing success of this program will be the result of the continued support and contributions from the agencies, jurisdictions, stakeholders and community members of the Middle Truckee River Watershed region. In 2012, the Truckee River Watershed Council contributed significantly to program development by working with Tahoe RCD and local jurisdictions to create and implement AIS ordinances. The Tahoe RCD extends its sincere appreciation to all of the individuals and agencies that participated in stakeholder meetings, and those that provided resources, suggestions, comments and encouragement to the program. In particular, the Tahoe RCD thanks the Truckee River Fund for providing the resources to initiate this program and the boating community for their patience, understanding, and input.